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1843

AN INAUGURAL

TREATISE ON VERATRINE,

OFFERED TO THE

DEAN AND FACULTY OF THE MEDICAL COLLEGE

OF THE

STATE OF SOUTH-CAROLINA.

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THE advantages which medical science has derived from analytical chemistry, have, during the last twenty years, been great and signal. The irritable stomach of a febrile patient is no longer loaded with a mass of woody fibre, once constituting the great specific in his disease; but a minute quantity of an alkali, resembling the substance it is extracted from in nothing but its effects, supplies its place—quinine, one of the greatest and most important discoveries of the microcosmic science.

The contemporary discoveries of morphine, iodine and other chemicals, showed the medical profession what they had to hope from the researches of the chemist; and diseases, hitherto almost the opprobria of medicine, vanished before the unencumbered strength of a comparatively unknown vegetable. One of these productions of nature and art combined, has of late years engrossed the attention of physicians, and the testimonials of its efficacy have been abundant in both hemispheres. I speak of VERATRINE, the object of the following essay; the pharmaceutical and medical properties of which I have endeavored to describe, both from personal experience and inquiry, and from the numerous references by the medical public here and in Europe. The several vegetables that yield this proximate principle, had already acquired a high celebrity in the materia medica of the ancients; for the names of *Colchicum Autumnale*, *Veratrum Album* and *Sabadilla*, are known to correspond to medicaments used by the Greek and Roman physicians. I will briefly animadvert upon their natural and medical history.

1. *Veratrum Album*, White Hellebore, a plant of the family Colchicaceæ, grows in the mountains of Switzerland, where it bears the popular name of Sneezeroor, [Niesewurz.] The root, the part used in medicine, is perennial, of a conical form, and appears, when dried, of a particular wrinkled appearance, making recognition very easy. The dried root comes to us in pieces, from one to three inches in length, in the form of a truncated cone or cylinder, of a black color internally, and exhibiting, when cut, a pale yellow surface, slightly interspersed with grey cylindrical fibres. The taste is described to be at first sweetish, then bitter, acrid and burning—qualities which seem to be lost in the dried state, as the specimens in my possession only communicated the sweetish taste. The powder or tincture of the root is a violent emetic and cathartic,

and fatal consequences may ensue from its administration. The former is sometimes used as an errhine, but requires dilution with a milder substance, and as such is often beneficial, but not without its danger. On the whole, the use of the plant had, on account of its uncertain and sometimes dangerous effects, been abandoned, when the discovery of its active principle brought it again into notice. It shared the reputation as an ingredient of the "Eau Médicinale," with the Colchicum, and the discovery of the same alkali in both, has confirmed the sagacious hypothesis of the composition of that famous remedy.

The Colchicum, probably the *Hermodactylus* of the ancients, belongs to the same family of plants, and dates its modern celebrity from the just mentioned opinion respecting its power in rheumatism and gout. The root is too well known to need description here, and its properties will be more readily discussed, when we speak of the active principle of all. The last and most important plant, however, is the *Veratrum Sabadilla*, the seeds of which, under the name of *Cevadilla*, are principally employed to obtain Veratrine. The seeds had long been known and used as a vermifuge, especially against taenia, before it was ascertained that they acted in any other manner than as a drastic purgative. They are still applied, externally, to destroy vermin about the scalp, and their effects are said to be sometimes highly unpleasant. German physicians of the last century had recommended small doses of it in various nervous complaints, as chorea, epilepsy, chlorosis and mania; but in consequence of the very uncertain effects of the drug, it had fallen very much into disuse at the time when the experiments of Pelletier and Caventou in France, and Meissner in Germany, proved that it contained a salifiable alkaloid of great activity, to which the name of Veratrine was given.

The remedy, recommended by Magendie and Turnbull, became speedily known, and was received into the Prussian, London, and lately (1842) also into the United States Pharmacopœia. Two methods are recommended for its preparation, the one adopted by Magendie, the other originating with Couerbe. The former is generally used in France, the latter has been adopted by the United States Pharmacopœia.

Magendie's Method.—The tincture of the seeds of *Veratrum Sabadilla*, prepared with boiling alcohol, deposits, upon cooling, whitish flakes. The clear tincture is then evaporated into an extract, which is subsequently dissolved in cold water, leaving a small quantity of fatty matter on the filter. The clear solution is now again subjected to evaporation, whereby an orange colored precipitate is obtained, supposed to be the coloring matter of the vegetable. A solution of the acetate of lead is now added, upon which a copious yellow precipitate is thrown down, which is

made to collect on the filter. The liquor, although now colorless, still contains the acetate of lead, which is separated by a stream of sulphuretted hydrogen. The liquid is next subjected to new filtration, boiled with magnesia, to neutralize any remaining acid, and again filtered. What collects on the filter, is then treated with boiling alcohol, and on evaporating the alcoholic liquors, a substance is obtained of extreme acridity and pulverulent texture, corresponding in all its properties to the alkalies. The color is still yellow, but by dissolving the alkaloid in alcohol, and afterwards precipitating it with water, it is at last obtained perfectly white and inodorous. The result is *Veratrine*.

The process of the United States Pharmacopœia I will only transcribe. Take two pounds of cevadilla bruised, and boil it with one gallon of alcohol, in a receiver attached to it, for one hour, and pour off the liquor. To the residue add another gallon of alcohol, together with the proportion recently distilled; again boil for an hour, and pour off the liquor. Repeat the boiling a third time, with one gallon of alcohol, and with that distilled in the previous operation, press the cevadilla, mix and strain the liquors, and by means of a water bath distil off the alcohol. Boil the residue three or four times with water, acidulated with sulph. acid, mix and strain the liquors, and evaporate to the consistence of a syrup. Add magnesia to excess, shake the mixture frequently, then express and wash what remains. Repeat the expression and washing two or three times, and having dried the residue, digest it with a gentle heat several times in alcohol, and strain after each digestion. Distil off the alcohol from the mixed liquors, boil the residue for fifteen minutes in water with a little sulphuric acid and purified animal charcoal, and strain. Having thoroughly washed what remains, mix the washings with the strained liquor, evaporate with a moderate heat to the consistence of a syrup, and then drop in as much solution of ammonia, as may be necessary, to precipitate the Veratrine; lastly, separate and dry the precipitate.

In this manner, one draehm of the alkali may be obtained from one pound of cevadilla. The investigations of chemists have demonstrated the existence of three other proximate principles in the article, if prepared in the above way; but as the medicinal Veratrine contains them all, their separation, a most complicated process, is of too little therapeutical importance to be detailed here.

Veratrine is a whiteish pulverulent light substance, very slightly soluble in water, for, when boiling, it dissolves about 1-1000 part of its weight, thereby becoming sensibly acrid. Alcohol and ether dissolve it most readily. Veratrine liquifies at 122° Fahr., and is converted into a substance resembling wax, which deposits, upon cooling, a yellow, amber-like mass. The tincture of Veratrine withstood all the usual tests I tried, and I could not es-

tablish any fixed characteristic, whereby to detect its presence. Nitric acid, which colors Strychnine red, does not act similarly on Veratrine; but by resolving the substance into its element, produces a yellow detonating matter. The alkaloid is entirely dissipated by red heat. It does not chrystalize, but forms in combination with acids, chrystalizable salts. These latter may be obtained by treating the alkaloid with water, acidulated by the acid in question, until they become neutralized, and afterwards evaporating. These salts are soluble in water, but their solution are decomposed by heat. It appears that the tartrate is the most eligible of them. The result of Pelletier's analysis is:

C.	66.75	equivalent	22	H.	= 22.
N.	5.04		34	C.	= 208.08
H.	8.54		6	O.	48.
O.	19.60		N.	14.15	= 292.33.

[Wood & Bache.]

The various authors that have given attention to the remedy, and adduced testimony in support of its efficacy, are, so far as I have been able to ascertain, named in the following list:

1. Magendie, Formulaire Pour, etc. Art. Veratrine.
2. Andral, Journal de la Phys. Experimentale, No. 1. 5821.
3. Pelletier & Caventou, Annales de Chymie et de Physique, xiv. 69.
4. Turnbull, on Veratria, London.
5. Bardsley, Hospital Facts and Observations. Manchester, 1830.
6. James Johnson, Medic. Review, vol. 21. 1834. 183 flg.
7. Brande's Chemical Dictionary.
8. Dr. Bell, in Stoke's Lectures. Art. Neurosis.
9. Jackson, Journal of Pharmacy. 1838. Vol. 3. 186.
10. Pharmacopœia of the United States of America. Philadelphia, 1842.
11. Dr. Wood, in Wood & Bache's Dispensatory. 1839.
12. Dunglison's New Remedies. Philadelphia, 1841.
13. Frost's Elements of Materia Medica. Art. Veratrine.
14. Western Journal of Medicine. Lexington, June No.
15. Die Preussische Pharmacopœia von Dulk.
16. Forcke, Physiologisch therapeutische Untersuchungen über das Veratria. Hannover, 1834.
17. Ebers on Veratria, in Hufeland's Journal. Dd. 86. 1838.
18. Idem in Caspar's Wochenschrift.
19. Riecke. Die Neueren Arzneimittel. New Remedies.

The experiments performed on animals, have demonstrated the activity of Veratrine; and its effects on the human organization are similar. The tincture, which I injected into the nostrils of a dog, excited violent sneezing for half an hour; and the same

quantity thrown into the mouth, occasioned profuse salivation. When preparing the ordinary ointment, a cat in my room licked the spatula used in the process, and was instantly attacked with vomiting and purging. Active salivation was observed to last for twenty minutes. The animal recovered. I have often treated cats in the same way, and the discharge of large quantities of saliva invariably followed.

The tincture of Veratrine (gr. iv. ad. \mathfrak{z} i. *alcoh.*) was injected into the mouth of a kitten two months old. Salivation came on immediately, attended with evacuations of the alimentary canal. I then threw one drachm into the rectum, and shortly tetanic convulsions supervened, so severe as to throw the animal from the table upon the floor. It died in half an hour from the time of the first injection. On dissection, the heart was not deprived of its vitality, for it contracted for several minutes after opening the body, so that death must have begun in the nervous centres. The brain did not present any striking appearances. The alimentary canal felt very rigid, and the rectum especially was much indurated—circumstances which, on subsequent observation, did not occur in healthy kittens. The mucous membrane of the rectum and colon was found injected, and violently inflamed at the part where the Veratrine had come in contact with it, evidently spreading upwards. Magendie, on the strength of similar observations, is led to say, that the effects, as regards the alimentary canal, are merely local; and it is only when we apply it to a very absorbent surface, as the pleura or the tunica vaginalis, that we produce the general effects so striking and terrible.

In my first investigations with the remedy, I was careless in testing it by smell. An incessant sneezing lasted for about two hours, tenesmus came on, only yielding after three evacuations to a full dose of opium. The ointment of the ordinary strength, rubbed upon the chest, produced a slight flush, a tingling sensation, and passed away speedily.

I took one-eighth of a grain after breakfast, in form of tincture, in a little mucilage. It was instantly followed by constriction of the throat, flushed face, difficulty of breathing and swallowing, profuse flow of saliva, and sneezing. Vertigo and nausea soon came on, together with an indescribable feeling about the epigastrium, which was relieved by pressure. The salivation and pain in the throat remained, and the feet were seized with icy coldness, extending as high as the middle of the thigh. This feeling seemed to subside by moving the limb, but returned when in an easy posture. I thought the powers of motion impaired, but this was probably owing to vertigo. These symptoms gradually subsided in the afternoon, but I did not repeat similar experiments.

The external application of Veratrine is, according to Turnbull, never followed by any unpleasant sequelæ, which only mani-

fest themselves if the dose has reached a certain amount, and the patient then experiences a sensation of heat and irritation. This affirmation seems contradicted by the case of an English physician, who, laboring under rheumatism of the arm, rubbed 20 grs. over the limb, and thereby experienced such severe pain, that opium alone could give him relief. His complaint not only remained uncured, but an eruption followed the application of the ointment. The endermic use produced in the hands of Ebers and Turnbull symptoms so severe, that both had to abandon it. I have only once tried it on a blistered surface, to the great pain and distress of the patient, who was almost thrown into convulsions. Applied to the pit of the stomach, the spinal marrow and nerves are speedily affected; violent pain is excited over the abdomen, and a certain feeling of distress, nausea and vertigo felt for sometime, often accompanied by convulsive twitchings of the muscles. The pulse generally falls below its natural standard.

The most common formula used is the ointment, which, shortly after its application, creates a tingling, itching and burning, which Turnbull thinks characteristic of the unadulterated chemical, and the presence of which shows that the system has been brought under its influence. Whenever, in my trials, the ointment did not occasion the above feelings, it had no effect on the patient.

It may be mentioned in this place, that the high price of Veratrine tempts to frequent adulterations; and to guard against imposition, it must be obtained from houses of first respectability only, no matter at what price. The best I tried, came from Merck's Laboratory, Darmstadt, although I never met with an adulterated article in the products of other laboratories.

Almost all classes of diseases have been treated more or less successfully by Veratrine; but in none is its efficacy supported by more numerous and respectable testimony than in those denominated *Neuroses*. All the authors named above obtained from its use the most satisfactory results; and its reputation for the cure of those painful disorders, seems now well established.

Its efficacy in "*Tic Doloieux*." Turnbull was the first to call attention to this new remedy in that disease; and the results he obtained with it, have not been surpassed, nor even equalled by others. He rubbed an ointment, composed of from 20 to 40 grs. to one ounce of lard, for fifteen minutes, over the seat of the pain, till the sensation of tingling and pricking caused by the friction, equalled that of the disease itself. The rubbing was then discontinued, and the irritation left to subside. The paroxysm was generally cut short, or if such was not the case, the ointment was renewed till the wished-for result was obtained. Turnbull cautions particularly that the ointment may not touch the eye, as the smallest quantity would excite severe ophthalmia. A permanent cure in long and protracted cases was more difficult, but the re-

medy never failed to shorten the paroxysm. He thinks likewise, that the pain, situated along the branches of the nerves is easier of cure, and may be treated by a weaker ointment, than if concentrated on one point. Six cases are detailed in Turnbull's Essay, which I reduced into the following synopsis:—

<i>Sex.</i>	<i>Age.</i>	<i>Duration of Disease.</i>	<i>Time of Cure.</i>	<i>Seat of Pain.</i>
1. Female,	55	36 years,	3 weeks,	cheek, forehead.
2. Male,	40	16 "	4 "	" "
3. Female,	48	22 "	3 applicat.	face.
4. " "	35	18 months,	1 applicat.	
5. " "	25	7 "	7 weeks,	supra orbital } foramen. }
6. " "	26	11 "	half hour,	left eyebrow.

Dr. James Johnson, in reviewing the above, cautions his readers to receive Turnbull's account with due allowance for the fondness of a parent for his offspring; but adduces shortly afterwards, his own testimony in support of the curative powers of Veratria in three cases—of seven, three and nine years standing, which occurred in aged people of both sexes. The improvement was manifest after a week's employment, and he left two of his patients with a box of the ointment in their possession, to apply it whenever an attack of the enemy should come on. Another case is detailed by Johnson, where the trunk of the sciatic and gluteal nerves were chiefly affected. The strongest ointment (3*ij.* ad. 3*i.*) could not induce the sensation of tingling and burning, and he abandoned its use in this case. For this and other reasons, Dr. Johnson gives it as his decided opinion, that Veratrine is a useful and potent medicine in certain nervous affections, and that it deserves to be, and no doubt will become one of the best established members of the *materia medica*.

Doctor Forcke, of Hanover, furnishes us with five cases of a cure of this painful disease being accomplished by external application of an ointment of gr. xx. ad. 3*i.* Three of the patients were old females, who, for many years, had suffered from repeated attacks of the pain of the infra orbital nerve. All other remedies that were tried, had been unsuccessful. The fourth case was a young woman, who, for thirteen years, had gone through a paroxysm in the supra orbital nerve, before the appearance of the catamenia.—She likewise recovered. In a young man, the neuralgia affected all the branches of the fifth pair, and became so severe, as to deprive him almost of his reason. The external use of Veratrine was successfully combined with Colchicum.

Dr. Wurdemann, of Charleston, and Dr. Irvine, of Greenville, have informed me of three cases of facial neuralgia, occurring in their practice, all of them yielding to the use of Veratrine Ointment of common strength. Other testimony goes to state, that, even when this medicine does not accomplish a cure, it shortens the paroxysm—a great gain in disorders so excruciatingly painful.

Bell, in his edition of Stokes' Practice, makes mention of two cases of *tic doloreux*, successfully treated and permanently cured by the application of the common ung. verat. The first patient, a lady, had ineffectually taken opium, iron and alteratives, and was relieved by the following pills, conjointly with the ointment.

R. Veratrine tartras, gr. ij. } m. f. pill vi., one three times daily.
 Extr. hyosciam, gr. iss.

Bell thinks the tincture a neater, and better preparation in some cases; and cites an example of its beneficial use. My friend, Dr. Holmes, informs me, that when a student, his preceptor cured him of facial neuralgia by Veratrine frictions alone, in a very short time.

Dr. James Tunstall, (*American Journal of Medical Sciences*), reports a case of spasmodic affection of the larynx, cured by applying Veratrine externally. Mrs. S., aged 41, widow, school-mistress, had, when young, a violent attack of pleurisy, and the bleeding deemed necessary for its cure, left her very weak, and she attributes to it the violent attacks under which she then labours. She is suddenly seized with a sense of suffocation, the respiratory muscles are put into convulsive action, the lower extremities become cold, the face becomes purple, the veins enlarge, and in fine, the countenance is expressive of deadly agony. Pulse varies from 60 to 75. The doctor, upon examination, was convinced that her disease was a spasmodic affection of the laryngeal nerves. Every variety of depletion and counter-irritation, the strongest opiates and anti-spasmodics had failed in procuring the slightest mitigation of the symptoms, which came on by any over-exertions in her duty as a teacher. Dr. T. prescribed 20 grs. of Veratrine to ℥i. of cerate, and had a portion of it rubbed twice a day on each side of the cervical vertebræ. A fortnight after, the attack terminated in a simple dyspnœa of an hour's duration, without spasm or expectoration. She subsequently, under its use, recovered her health so well, that she could walk eight hours a day with impunity, although previously she was not able to leave her residence, without inducing a spasm.

Examples of this sort might be multiplied, but enough has already been said, to commend the use of Veratrine in those complaints, where the nerves are morbidly implicated.

From the reputation of colchicum in rheumatism and gout, as good results were anticipated from its alkali, and numerous trials have not failed to confirm them. Ebers is of opinion, that the stomach must be in a healthy state before the remedy can be successfully employed. In some of his cases, Veratrine procured relief more speedily than any other agent. It acted as a diuretic and sedative, without any evidence of narcotism. In acute rheumatism, Turnbull enjoins the anti-phlogistic plan, together with a weaker ointment, (gr. 8, ℥i.) and in chronic cases, perseverance in

the use of the remedy is often required. Bardsley subsequently found it very advantageous when thus used. In gout, Turnbull gave it both internally and externally, where it seemed to act like colchicum. Sir C. Scudamore also recommends this method on his own experience. Besides the nine cases detailed in Turnbull's work, I can adduce several that have occurred under my observation. Richard Burnham, a painter, aged 52, subject to rheumatism, sent for me the 12th of September. I found him in bed, his pulse strong and hard, his tongue slightly furred, and complaining of violent pain in his right foot. The limb was swollen, and its veins very much distended, the great toe was considerably enlarged, and so painful to the touch, as to disable the patient from rising on his feet. Judging his complaint to be rheumatic gout, I rubbed the Veratrine ointment of common strength over the seat of the pain for several minutes. The itching soon came on, and was followed by speedy exacerbation of the acute pain. I left him in an hour, much improved, and ordered two more applications during the day. About to call on him next day, I met him on my way to his house, which he had left to go to work. Four applications sufficed to cure him. He was overjoyed at his speedy release. His left toe became, a short time afterwards, similarly affected, but yielded to a single application. It may here be stated, that the individual has been subject for the last ten years to these paroxysms, and was usually confined for four and six weeks on account of their violence and duration. Since the above was written, the same gentleman has had frequent attacks of his malady; but, as he writes me, is less afraid of them than formerly, as he knows the ointment relieves him more speedily, and with greater certainty, than any remedy he has ever employed.

2. E. R. Stokes, Esq., now of Charleston, sustained some eight years ago, an injury of the spinal column, which occasioned him severe pain along the course of it. When it last came on, he applied an empirical strengthening plaster to his back, which blistered the surface it covered very severely, and aggravated the complaint by the pain the blisters inflicted.

I saw him the 23d of July, two weeks after he had removed the plaster. The square it had covered, was marked by blisters and sores, half healed, the lower vertebræ painful, the region of the lesser glutei much swollen. There was slow pulse, great depression of spirits, and inability to rise from his chair. I applied simple cerate over the seat of the pain, and rubbed tincture of Veratrine over this for about a minute. The patient complained of violent burning and itching, occasioned by the endermic use; but it passed away soon. July 24th.—Has slept sound for the first time since his attack, and free from pain. 25th.—The symptoms had continued again last evening, and been severe during the night. I directed the Veratrine ointment to be rubbed in

twice a day. The burning occasioned by it, deprived him of another night's sleep; but the next day (26th) the pain is much relieved. In fine, by continuing the use of the remedy, he had perfectly recovered on the 29th of the same month, and up to writing this, (February) no return of the complaint has occurred.

3. Mrs. H., related to the above named gentleman, on his recommendation, rubbed some of his medicine to her back, previously blistered by a "strengthening plaster." Convulsions ensued, and several days elapsed before the nervous symptoms passed off. When called to see her, I ordered an anodyne and frictions with olive oil over the place. The patient being pregnant, I interdicted the continuance of the remedy, for it may here do harm, without prospect of much good.

If the extent of integument to which we apply the ointment, is considerable, it must be proportionately weaker. Turnbull often applied it directly over the inflamed surface, and instead of producing any additional irritation, the inflammation and swelling rapidly subsided, and the pain was quickly subdued. This is confirmed by the two cases above detailed.

Paralysis of the muscles of the eyelids and face, symptoms sometimes attending upon facial neuralgia, were removed when Veratrine was employed for the treatment of the latter complaint.

This led to the inference of a favorable result in the treatment of paralysis of other parts of the body. The results are very gratifying. Turnbull has only tried it in slight paralytic affections of certain muscles, co-existing with tic doloieux, or like complaints; and the *modus operandi* of the medicine in these cases, he thinks, is, that the degree of warmth and stimulation, occasioned by the friction, enables the nerves to resume their functions.

Dr. Forcke relates nine cases of partial paralysis, cured by Veratrine.

1. A youth had lost his power of motion in the arm, without any appreciable cause—the limb was emaciated. Strychnine and other remedial means employed unsuccessfully. Frictions with Veratrine ointment were then had recourse to, and the patient quite recovered the use of his arm.

2. A man of robust constitution presented himself under the following appearances to Doctor Forcke: the left side of the face was swollen, the muscles completely relaxed, the eyelids motionless, and the left lid depressed in such a manner, as to expose the eyeball. By this the conjunctiva had become thickened and inflamed, and the eye was nearly lost. The branches of the inferior maxillary nerve were affected with the most acute pain. The hearing was dull, and the speech greatly impeded. Veratrine was used externally and internally; but, deriving no benefit from its use in that form, Dr. F. applied three grains of the alkali

over the denuded dermis—severe pain and irritation followed, and after three days another grain was applied. The patient now began to move his eyelids, and the facial muscles recovered their tone in some measure, when he ceased to visit Dr. Forcke. Dr. Allston, of Georgetown, S. C., afflicted with paralysis of the right side, informs me, that of all the remedies he has used for his disease, none has rendered him more service than Veratrine. He is now able to walk with an assistant, an improvement in his condition that dates from his use of the alkaloid. In the course of his disease, he was almost disabled from swallowing, so as to make his advisers think of nourishing him through the œsophagus tube. The repeated use of Veratrine frictions, however, so far restored him, as to make him quite comfortable on that point. I am informed that the medicine produced that effect on him repeatedly, so as to leave no doubt as to the agency of our remedy. He had tried Strychnine in vain.

This case suggests the plausibility of employment of the chemical in hydrophobia, where the inability to swallow and the dreadful complication of nervous symptoms might be mitigated by the endermic use of the alkali.

Dr. D. B. Irvine, of Greenville, S. C., has informed me of the following case that occurred in his practice: A. M., aged 22, a farmer, had taken turpentine to relieve “gravel,” as a prescription of his own. The next day he waded a stream, in consequence of which his health became deranged immediately, leaving his hand and arm exceedingly swollen. He had lost all motion in the limb, and was perfectly paralytic along the course of the arm. Dr. I. applied the Veratrine ointment of common strength, and in three days from its first employment, the swelling was gone, and the arm as well as ever.

The Hon. Judge Earle uses it for a paralytic affection of the wrist, and, as I am informed, with benefit. His formula is Veratrine pur. gr. xv. ad. cerat. simp. ζ i.

Ebers recommends our remedy likewise in hysteria, hypochondriasis and chorea. A case of the latter fell to the care of my friend, Dr. Irvine, of Greenville. The patient, a young lady, aged 17, had violent symptoms of spinal irritation, with spasmodic twitchings of the orbicularis oris. She had been under a variety of treatments for four years, and her case became evidently more hopeless. The common Veratrine ointment was applied over the epigastrium, and in a short time the pulse fell from 100 to 60, but subsequently no such effect was noticed. Under the assiduous use of the same remedy, the serious symptoms have subsided, and the patient is now almost well. Carbonate of iron and Valeriana were used at the same time.

It was the above stated fact, that Veratrine reduces the frequency of the pulse, which induced Turnbull to apply it to heart dis-

eases, especially where a gouty and rheumatic diathesis existed. These and simple nervous or gouty palpitations were often relieved. The author details in his work nine cases of cardiac diseases, viz. : palpitation, angina, dyspnœa, where all the patients became "quite well" from frictions of the ointment over the cardiac region and down the arm. Johnson, in his strictures on Turnbull's work, mentions that in three cases of affections of the heart, the patients obtained relief of their distress whenever the specific itching could be induced. This he ascribes to the counter-irritant effects, which were solely confined to the nerves of the parts, the blood vessels being scarcely affected. Such, upon inquiry, I found to be the opinion of Dr. Geddings, who thinks it an excellent counter-irritant, generally speaking. Four years later, (1839) Dr. Johnson, after repeated trials with the remedy, was of opinion that Turnbull had not exaggerated the healing powers of his favourite, and exults in the verification of his prediction, that Veratrine should one day be introduced into the Pharmacopœia of his country.

The swelling of the joints, symptomatic of rheumatism, disappeared when the ointment was applied for its cure. It can therefore be used in all kinds of swelling, both glandular and others.

Turnbull saw goitre essentially benefited by its use, and such was no less the case in swelling of the mammary glands, buboes and scrofulous tumours, where Iodine had failed. Ten grains are to be rubbed in for ten minutes, twice a day, and every week the strength of the ointment must be increased. The parts must be washed after the rubbing with soap and water, so that they may bear exposure to the air. My brother, Dr. Wm. Rabe, became troubled with boils in the axilla, which he referred to insect bites. Hartshorn was unavailing, and the application of tincture Veratrine, by means of a camel hair pencil, was followed by relief and resolution next day.

Over the signature of "Medicus," may be seen in the New-York Lancet a communication, that Veratrine prevents the pain from being felt, which is the necessary attendant on surgical operations. It was tried when the incisions were small, and was found to answer all expectations fully. The patient suffered little or no pain. It was used as follows: a strong alcoholic solution was rubbed in, till the part became insensible to feeling. It was then quickly and carefully washed off with soap and water, and the operation proceeded with.

The June number of the "Western Journal of Medicine," mentions the successful use of the ointment in Dysmenorrhœa, and the Medio-Chirurgical Review likewise testifies on this subject; but I have not been able to obtain sight of the number in question.

Magendie recommends that Veratrine should be given as a drastic cathartic, where speedy action on the bowels is needed. He found it effectual in aged persons, where large masses of feces had accumulated in the intestines. The nervous system must, however, be free from disease, or no action on the bowels will ensue. Magendie details the case of an apoplectic old man, where two grains were not productive of any great evacuations. Turnbull advised it likewise in Diarrhœa, in half grain doses, and experience has proved it, like other cathartics, to be very serviceable. I have prescribed it to four patients, of different ages and constitutions, with the best effects. The most astonishing powers of Veratrine, however, are manifested in its employment in dropsy, and its curative employment in that disease rests upon most unquestionable evidence, for, independent of Turnbull, who cured Hydrothorax, Anasarca and Ascites in a few weeks, even where the lives of the patients were threatened by the disease,—a number of other physicians testify to its successful use in all the varieties of dropsical effusion.

If the dropsy is produced by severe functional derangement, we must endeavor to remove the same before Veratrine can be employed with much chance of success. The form used, is that of the ointment, and frictions with it should be made over the whole surface of the part where the effusion exists, and the quantity to be used at once, should, in adults, not exceed seven grains, nor be less than two. The rubbing should be performed twice, and must be continued for about twenty minutes.—The friction acts as a diuretic, and the quantity of urine evacuated at one discharge, almost exceeds belief. It occurred invariably in Turnbull's cases, and was followed by gradual subsidence of the symptoms—the swelling disappeared, and the patients quickly regained their health and strength. A case of Turnbull will best illustrate these statements.

T. B., of York, had been labouring under Ascites for a year, he was Anasarcous throughout, cough, dyspnœa, irregular pulse, and a sense of suffocation upon lying down were present, together with all the usual symptoms of dropsy. The urinary secretion did not reach a pint daily. The usual medicines, digitalis, squill, colchicum and mercury had been resorted to without benefit, and Turnbull determined to try Veratrine. Four grains of the alkali were rubbed in at bed time, and were followed during the same night by an evacuation of eight pints of urine, and consequent marked diminution of the swelling. A most alarming prostration of strength took place, however, and stimulants were required to support the patient. A second application was hazarded three days after, consisting of half the quantity as formerly. The diuretic effects were equally marked; but a third friction

was delayed for six days, on account of supervening debility. From this time the dropsy rapidly disappeared, and the patient improved in a manner not to be anticipated, and at the end of the third week after the first trial, he was completely cured. Turnbull relates three more similar cases.

Ebers, an eminent German practitioner and medical writer, Physician to the Hospital at Breslaw, speaks in terms of great praise of the powers of Veratrine in dropsy. "Unadulterated Veratrine acts on the urinary secretion with magical powers, and it may seem fabulous when I remark, that frictions with a very weak ointment, two or three times in twenty-four hours, on the inner part of the thigh, epigastric region, or about the navel, has excited such a copious flow of urine, that the patients under its long continuance began to feel weak, and the anasarca, and even the dropsical effusion in the abdomen, in a short time, almost disappeared." He gave it in slighter hydropic cases, that followed fevers with great success, and of twenty-four more serious cases, fifteen recovered, one was relieved, eight terminated fatally, in four of which diuresis was not induced. Other physicians confirm Ebers' statement, but Späth denies its use altogether.

Dr. C. B. Irvine, of Greenville, has furnished me with the following case:—L. R., a miller at Pinckneyville, S. C., at work on the farm of Dr. * * *, had contracted dropsy in that unhealthy region. The Doctor took him under his charge, but dismissed him uncured. The patient then applied to Dr. McMahon, brother-in-law to Dr. Irvine, who put him on the use of Veratrine, and *mirabile dictu*, a single application of the ointment at night produced such a copious diuresis, as to threaten the life of the patient by the debility the withdrawal of the stimulus occasioned. In fine, two rubbings sufficed to the cure of the patient, who has had no relapse up to the present time.

Dr. Irvine himself, is a great admirer of the remedy and its mode of action; but its very high price deters him, like many others, from its more extensive use.

C. W., aged 27, applied to me for relief of general dropsical effusion, which had lasted since her last pregnancy, two years before. Her legs and ankles very much swollen, breathing difficult, cough present, and aggravated upon lying down, great debility and depression of spirits. Upon application of the ointment over the umbilicus and hypogastrium; she had, during the same day, several copious discharges of urine, and the feeling of weight and oppression about the chest, had, she thought, been greatly relieved. I prescribed the pulv. Jalap. comp. and Veratrine friction twice a day; and she has notified me, that, although not entirely relieved, she was yet much better than she had been for the last two years.

An old servant of my brother's was also cured of an effusion in the legs by the use of Veratrine ointment, combined with squills and calomel,

The catalogue of diseases, where Veratrine has been tried successfully, is, according to the few works I had access to, while compiling this treatise, exhausted; and should in future practice, any opportunities occur, to test it more fully, I have resolved to do so, and it is to be wished, that by chemical analysis, the same principle may be found in plants more common than those which now furnish it, so as to make the price of the remedy cheaper, an object of no common consideration in the section of country where I reside.

I feel bound, towards the conclusion of this sketch, to animadvert to the circumstance of my being only for three years a resident in America and student of the English language, which will, I hope, in some manner, excuse the faults of style and construction, which must have but too often occurred in the foregoing lines. I indulge the hope, that diligent study will bring me to such a degree of advancement in this respect, as a foreigner may hope to attain.

APPENDIX.

FORMULÆ.

PILLS OF VERATRINE :

℞. Veratrine, gr. i.
Mucil. gum. arab. gr. v.
M. f. pill xij.—Dose, from one to three, daily.
[Magendie.]

℞. Veratrinæ, gr. ij.
Pulv. glycyrrh. gr. xij.
Extr. hyosciam. gr. vi.
M. ft. pill xij.—One three times a day.
[Turnbull.]

℞. Veratrine Tartras gr. ii.
Extr. hyosciamus gr. iss.
M. ft. pill vj.—One three times daily.
[Bell.]

TINCTURE OF VERATRINE :

℞. Veratria, gr. iv.
Alcoholis, ℥i.
M. ft. Tinctura.
[Magendie.]

OINTMENT OF VERATRINE :

℞. Veratrine, gr. x. sive xv.
Adeps, ℥i.
[Turnbull.]

℞. Veratria, gr. x. usque. ad. xx.
Ol. oliv. gtt. iii.
Triturentur, deinde misce cum.
Cerat. simpl. ℥i.
M. f. cerat.—One drachm, to be rubbed in during the day.

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